REMARKS

By the above amendments, Applicant has amended claims 1, 9, and 10; canceled claims 6-8; and kept claims 3, 5, 11, and 12 unchanged.

Claim Rejections under 35 U.S.C. 103(a)

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita et al. (US Pat. No. 5,990,618) in view of Montgomery et al. (US 2003/0117770).

Claims 1, 3, 5, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita et al. (US Pat. No. 5,990,618) in view of Montgomery et al. (US 2003/0117770), and further in view of Getz, Jr. et al. (US Pat. No. 6,771,502).

Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita et al. (US Pat. No. 5,990,618) in view of Montgomery et al. (US 2003/0117770), and further in view of Krassowski et al. (US 2003/0183379).

In view of the above-cited rejections, Applicant has canceled claim 7-8, has amended claims 1, 9, and 10, and hereby otherwise traverses these rejections.

The rejection of claims 7-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Morita et al. (US Pat. No. 5,990,618) in view of Montgomery et al. (US 2003/0117770) is now moot.

As Applicant has canceled claims 7 and 8 and has amended claim 9 to depend from claim 1, the rejection under 35 U.S.C. 103(a) as being unpatentable over Morita et al. (US Pat. No. 5,990,618) in view of Montgomery et al. (US 2003/0117770) is now moot.

The rejection of Claims 1, 3, 5, and 10-12 on Morita et al. (US Pat. No. 5,990,618) in view of Montgomery (US 2003/0117770) and further in view of Getz, Jr. et al. (US Pat. No. 6,771,502) is traversed.

Specifically, independent claims 1 and 10, as amended, each now incorporate the subject matter of claim 6, as previously presented, therein. Since the above-cited combination was not used to reject claim 6 under 35 USC 103(a), Applicant submits that claims 1 and 10, as amended, are not rendered obvious by Morita et al. in view of Montgomery et al., and further in view of Getz, Jr. et al. Thus, Applicant submits that claim 1, as well as claims 3 and 5 depending therefrom, and claim 10, as well as claims 11 and 12 depending therefrom, are allowable over the above-cited reference combination.

The rejection of Claim 1 on Morita et al. (US Pat. No. 5,990,618) in view of Montgomery (US 2003/0117770) and further in view of Krassowski et al. (US 2003/0183379) is traversed.

Claim 1, as amended, recites in part:

> a heat sink unit which includes a substrate and a plurality of fins extending from the substrate, ... the fins being made of aluminum material; ...
>
> a thermal interface interposed between the back substrate of the panel unit and the substrate of the heat sink unit for connecting the panel unit and the heat sink unit;
>
> wherein the substrate of the heat sink unit is formed of an anisotropic material for transferring the heat from the panel unit directly through the heat sink unit substrate to the fins of the heat sink unit ...

Applicant submits that such a plasma display panel, as set forth in claim 1, as amended, is neither taught, disclosed, nor suggested by Morita et al., Montgomery et al., or Krassowski et al., taken alone or in combination with any other cited reference.

The Examiner, in discussing the rejection of claims 1 and 6 based on Morita et al. in view of Montgomery et al. and further in view of Krassowski et al., admits that Morita et al. does not disclose or suggest the use of an anisotropic material for the substrate of the heat sink unit. Montgomery et al., which is used as a disclosure of carbon nanotube interface structure, does not disclose or suggest a heat sink with fins, so Montgomery et al. is unable to overcome this particular shortcoming of Morita et al. As such, the Examiner has attempted to rely upon Krassowski et al. for this purpose.

Krassowski et al. discloses, in Paragraphs [0069]-[0070], that the "base 12 may be made of any suitable high thermal conductivity material" with one preferred material being graphite. It is then further disclosed that the "graphite material is preferably anisotropic graphite sheet material ..." However, Krassowski et al. also provides, at [0065], that "[in] order to provide a high performance yet light weight heat sink apparatus, the base 12 is constructed from a first relatively high thermal conductivity material, and the fins 14 are constructed of a second relatively low thermal conductivity material which is much lighter in weight than typical metal or copper fins." Krassowski et al. then, in [0065], indicates a goal of that invention is to develop "a good performing low profile heat sink with lower cost and lower weight than conventional heat sinks made from copper and aluminum ..."

The Examiner first argues, with respect to claim 1, for the modification of the base of the heat sink of Morita et al. "to incorporate the anisotropic material for the substrate of the heat sink as disclosed by Krassowski ..." With respect to the subject matter of previously presented claim 6, the Examiner concedes that the combination "does not appear to specify the use of aluminum fins." The Examiner provides that the combination "discloses the use of plastic fins that have a lower weight but a lower heat dissipation than aluminum fins." Yet, the Examiner proceeds to contend that replacing the plastic fins with aluminum ones would have been an obvious modification. Applicant submits that **such a modification expressly teaches away** from the disclosure of Krassowski et al. **and/or would render** Krassowski et al. **unsatisfactory for its intended purpose** (i.e., achieving lower cost and lower weight) (MPEP §2145(X)(D); §2142.02; §2143.01). Additionally, as the feature of plastic fins is introduced in a secondary reference, modifying the plastic fins is not even a direct modification of the primary reference, Morita et al. For all of the foregoing reasons, Applicant submits that Morita et al. in view of Montgomery et al. and further in view of Krassowski et al. fails to render claim 1, as amended, obvious under 35 USC §103(a).

More fundamentally, Applicant submits that **neither Morita et al. nor Krassowski et al.**, alone or in combination, **discloses or suggests a heat sink having a base made of an anisotropic material and fins made of an aluminum material,** as required by claim 1, as amended. Morita et al. does disclose a "heat sinking unit 2 made of aluminum or its alloy ..." (Column 5, lines 19-21), further indicating that "the heat sinking unit 2 comprises fin blocks 21 and thin-wall portions 22 ..." (Column 5, lines 28-33). Thus, Morita et al. does not disclose or suggest a heat sinking unit

2 with a base made of a material with different specifications than that of the fins.

Krassowski et al. discloses a heat sink 10 that "includes a base 12 and a plurality of fins 14" and that "the fins 14 are part of an integral fin set 16 which includes the fins 14 and a web 18 joining the fins." (Paragraph [0063]) As such, it is web 18 that generally corresponds to the substrate of the heat sink, as set forth in amended claim 1, not the base 12. In a manner similar to Morita et al., Krassowski et al., in indicating the integral nature thereof, actually teaches the fins 14 and the substrate web 18 to be made of the same material. Accordingly, similar to Morita et al., Krassowski et al. does not disclose or suggest a fin set 16 with a web 18 made of a material with different specifications than that of the fins 14. Therefore, Morita et al. in view of Krassowski et al. does not disclose or suggest the heat sink unit as defined in claim 1, as amended. As noted above, the other reference (Montgomery et al.) does not even disclose or suggest a heat sink with fins and is, thus, unable to overcome the shortcomings of the other two references asserted in the rejection.

Accordingly, reconsideration and withdrawal of the rejection and allowance of claim 1, as amended, over Morita et al. in view of Montgomery et al., and further in view of Krassowski et al. are respectfully requested.

Conclusion

For all the above reasons, Applicant asserts that all the pending claims are now in proper form and are patentably distinguishable over the prior art. Therefore, Applicant submits that this application is now in condition for allowance, and an action to this effect is earnestly requested.

Respectfully submitted,
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